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PRESS ANNOUNCEMENT

Optimise Your Liquid Batching System: 5 Flow Meter Considerations

Titan Enterprises, a leading provider of flow metering solutions, have been designing and manufacturing accurate and reliable flow meters for batch control systems for over 40 years. Titan reports on the considerations required when choosing a flow measuring device for batching control.

Titan has published a white paper on the use of ultrasonic flowmeters in high-speed batching but here we focus on the general batching system. We discuss five key considerations when choosing a flow meter that will ensure your batching process runs smoothly.

Probably the most recognised batch filling system is that of beverages, either directly into a glass or into bottles. But batching systems are also integral to the pharmaceutical and medical, and chemical and oil industries. Additive injection or chemical dosing are typical applications where flow meters are used to precisely control the amount of liquid dispensed, which is critical in such processes.

1. Repeatability is essential for a productive batching process

Multiple uncertainties can change the amount of liquid being dispensed, causing a negative effect on the repeatability of the system. Controlling as many process

variables as possible will help to ensure the accuracy and repeatability of flow measurement. Flowmeters, such as Titans' mini turbines, can boast repeatability of 0.1% or better when operating under the same conditions.

2. The physical properties of the batch-filled liquid will dictate equipment requirements

The choice of flowmeter may be limited by the properties of the liquid – whether it is viscous, volatile, corrosive, flammable, or contaminated with particles, for example. An oval gear flowmeter would be ideal for batch-dosing high-viscosity liquids such as syrups, whereas a turbine flow device, such as Titan's 800-series flowmeters, are more appropriate for water and beer dispensing.

3. Maintaining constant process conditions

Changes in flow rate, temperature and pressure may cause the flow meter to function in an unpredictable dynamic way. Although maintaining operating parameters at a stable point is optimal, this may not always be possible and fluctuating flow rates for example, can be compensated for by using a higher specification measuring device, such as Titans' Atrato® ultrasonic flowmeter.

4. Constant liquid flow or pulsations?

Keeping the overall flow constant and avoiding any pulsations within the batching system will prevent aliasing and incorrect flow readings over the batch operating cycle. If pulsation is inherent, the choice of flowmeter is crucial in mitigating the effects of pulsating flow.

5. Limiting system inertia

Simple adjustments to the batch system design, such as control value specification and the positioning of the flow meter, can help to offset the effects of inertia.

Choosing the correct flow meter for a batch system can be complex and Titan Enterprises are happy to help you find the best flow meter solution for your process and plant.

For further information on Titan's flowmeter and instrumentation range or to discuss any process and technical issues, please contact Titan Enterprises on +44 (0)1935 812790 or sales@flowmeters.co.uk. Visit our website at www.flowmeters.co.uk

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Drawing upon over 40-years of flowmeter innovation - Titan Enterprises Ltd is a leading manufacturer of high-performance flow measurement solutions, including the Atrato ultrasonic flowmeter, Oval Gear flowmeters, low flow Turbine flow meters and a flow instrument range. Titan's company philosophy of "pushing the envelope by trying to do things a little different and better" has resulted in sales of over 2 million flowmeters and components into 50 countries worldwide and a repeat purchase percentage of 95%. All flow meters produced by Titan Enterprises are designed and manufactured to ISO9001 and calibrated to an uncertainty of ±0.25%.

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Illustrative image (available on request)

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